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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,737	04/16/2004	Robert R. Riggsby	A-9511	1346
5642	7590	05/31/2007	EXAMINER	
SCIENTIFIC-ATLANTA, INC. INTELLECTUAL PROPERTY DEPARTMENT 5030 SUGARLOAF PARKWAY LAWRENCEVILLE, GA 30044			DSOUZA, JOSEPH FRANCIS A	
ART UNIT		PAPER NUMBER		
2611				
NOTIFICATION DATE		DELIVERY MODE		
05/31/2007		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail@sciatl.com

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/826,737	RIGGSBY ET AL.
	Examiner	Art Unit
	Adolf DSouza	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 April 2004.
- 2a) This action is FINAL.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 - 19 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1 - 19 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

***Information Disclosure Statement***

1. The information disclosure statement filed 8/18/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Applicant did not submit a copy of foreign patent document DE 3542655.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 16, the phrases "cable shaped, a frown and a smile " renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by " cable shaped, a frown and a smile "), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacoby (US 4,266,204) in view of Traub et al. (US 5,427,111).

Regarding claim 1, Jacoby discloses a device for equalizing an input signal (Figure 1,, element 14; column 2, lines 61 – 67; column 3, lines 35 - 38), comprising:

a differential equalizer (Fig. 1, element 14) coupled to the first differential amplifier stage (Fig. 1, element 12) for frequency shaping the amplified input signal (column 2, lines 61 – 67; column 3, lines 35 - 38).

Jacoby does not disclose that the differential amplifier comprises a floating ground.

In the same field of endeavor, however, Traub discloses wherein the differential amplifiers comprises a floating ground for increased signal bandwidth (Title, column 3, lines 45 – 56; column 6, lines 59 – 64; Fig. 1, element 201).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the floating ground, as taught by Traub, in the system of

Jacoby because this would result in less noise especially when the actual ground has high noise, as is well known in the art.

6. Claims 2, 5 – 7, 9, 12, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goyette (US 6,433,642) in view of Jacoby (US 4,266,204) and further in view of Traub et al. (US 5,427,111).

Regarding claim 2, Goyette discloses a device for equalizing and amplifying an input signal (Fig. 1; Abstract), comprising:

a first amplifier stage for receiving the input signal having an input power level and for amplifying the input signal (Fig. 1, element 12; column 1, lines 25 – 46; column 2, lines 39 – 47; column 5, lines 10 - 21);

a equalizer coupled to the first amplifier stage for frequency shaping the amplified input signal (Fig. 1, element 16; column 1, lines 25 – 46; column 2, lines 39 – 47; column 5, lines 10 - 21);

and a second amplifier stage coupled to the equalizer for further amplifying the input signal to provide an amplified output signal (Fig. 1, element 14; column 1, lines 25 – 46; column 2, lines 39 – 47; column 5, lines 10 - 21) wherein the positioning of the differential equalizer between the first and second differential amplifier stages maintains a low level of noise and improved distortion levels (Abstract, last 2 lines; column 1, lines 25 - 27).

Goyette does not disclose that the amplifiers are differential amplifiers, that the equalizer is a differential equalizer and a floating ground.

In the same field of endeavor, however, Jacoby discloses a differential amplifier and differential equalizer (Fig. 1, elements 12, 14; column 2, lines 61 – 67; column 3, lines 35 - 38).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the differential amplifiers and equalizers, as taught by Jacoby, in the system of Goyette because this would allow the advantage of differential signals to be taken advantage of, namely, less susceptible to noise environments, as is well known in the art.

In the same field of endeavor, however, Traub discloses wherein the differential amplifiers comprise a floating ground for increased signal bandwidth (Title, column 3, lines 45 – 56; column 6, lines 59 – 64; Fig. 1, element 201).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the floating ground, as taught by Traub, in the system of Jacoby because this would result in less noise especially when the actual ground has high noise, as is well known in the art.

Regarding claim 5, Goyette discloses the first and second amplifier stages and the equalizer are packaged in an integrated circuit, or wherein the first amplifier stage, the

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second stage, and the equalizer are packaged as integrated circuits (column 1, lines 43 - 46).

The limitation about the amplifier and equalizer being differential are as analyzed in claim 2 above.

Regarding claim 6, Goyette discloses the device is located within a transmitting device (column 1, lines 18 – 27; column 2, lines 9 - 25).

Regarding claim 7, Goyette discloses the device is located within a receiving device (column 1, lines 18 – 27; column 2, lines 9 - 25).

Regarding claim 9, Goyette discloses the equalizer has a set of tunable value components (column 3, line 49 – column 4, line 9).

The limitation about the amplifier and equalizer being differential are as analyzed in claim 2 above.

Claim 12 is similarly analyzed as limitations in claims 2 and 6.

Claim 17 is similarly analyzed as limitations in claims 2 and 7.

Regarding claim 16 Goyette discloses the equalizer provides the output signal having a frequency response that is one of tilted up, tilted down, cable shaped, linear shaped, a combination of cable and linear shaped, a frown, and a smile (column 3, line 49 – column 4, line 9; wherein the various shapes of the frequency response is interpreted as being provided by the equalizer that provides the desired linearity and noise).

7. Claims 3 – 4, 8, 13 – 14, 18 - 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goyette (US 6,433,642) in view of Jacoby (US 4,266,204) and further in view of Traub et al. (US 5,427,111) and Schemmann et al. (US 6,788,169).  
Regarding claim 3, Goyette does not disclose noise levels are improved over having the single ended equalizer prior to the amplifier stages.

In the same field of endeavor, however, Schemmann discloses a comparison between the noise level of the device are improved over the noise level of a device having an single-ended equalizer positioned prior to amplifier stages (Fig. 2; column 4, line 44 – column 5, line 28, in particular column 5, line 24; wherein the noise levels are improved by the phase shifter between the amplifiers which provides a phase shift to cancel out the noise and distortions. If the amplifiers were adjacent, there would be not phase shit to cancel out the distortions and noise due to them).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Schemmann, in the system of Goyette because this would reduce the noise, as disclosed by Schemmann.

Regarding claim 4, Goyette does not disclose distortion levels are improved over having the single ended equalizer subsequent to the amplifier stages.

In the same field of endeavor, however, Schemmann discloses a comparison between the distortion levels of the device are improved over distortion levels of a device having a single-ended equalizer positioned subsequent to amplifier stages (Fig. 2; column 4, line 44 – column 5, line 28; wherein the distortion levels are improved by the phase shifter between the amplifiers which provides a phase shift to cancel out the distortions. If the amplifiers were adjacent, there would be not phase shit to cancel out the distortions).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Schemmann, in the system of Goyette because this would reduce the distortion, as disclosed by Schemmann.

Regarding claim 8, Goyette does not disclose the differential equalizer has a set of fixed value components.

In the same field of endeavor, however, Schemmann discloses the equalizer has a set of fixed value components (column 5, lines 28 – 39; wherein the equalize components are fixed to obtain the phases described).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method, as taught by Schemmann, in the system of Goyette because having a fixed equalizer would simplify the hardware, as is well known on the art.

In the same field of endeavor, however, Jacoby discloses a differential equalizer (Fig. 1, element 14; column 2, lines 61 – 67; column 3, lines 35 - 38).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the differential equalizer, as taught by Jacoby, in the system of Goyette because this would allow the advantage of differential signals to be taken advantage of, namely, less susceptible to noise environments, as is well known in the art.

Claim 13 – 14, 18 - 19 are similarly analyzed as claims 3 – 4 respectively.

8. Claims 10 – 11, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goyette (US 6,433,642) in view of Jacoby (US 4,266,204) and further in view of Traub et al. (US 5,427,111), Tsinker (US 6,150,875) and Taralp (US 4,609,887).

Regarding claims 10 and 11, Goyette does not disclose the equalizer is a tilt-up, tilt-down equalizer having breakpoint circuits, resonator circuits and impedance matching circuits.

In the same field of endeavor, however, Tsinker discloses the differential equalizer is an up-tilt and down-tilt differential equalizer (Fig. 5; column 5, lines 50 – 52; Fig. 6A; column 7, lines 18 – 20; wherein Fig. 5, element 50 shows the differential equalizer and Fig. 6A shows both up-tilt and down-tilt in the frequency response of equalizer 50), the up-tilt differential equalizer comprising:

first and second differential inputs (Fig. 5, elements VP, VN);

first and second differential outputs (Fig. 5, elements IEOP, IEON);

breakpoint circuits coupled between the first and second differential inputs and outputs for frequency shaping the input signal (Fig. 5, elements 24a, 24b, 34a, 34b, CONTROL signal; column 6, lines 11 – 14; wherein the frequency shaping and gain control is done by elements 24a, 24b, 34a, 34b, CONTROL signal);

resonator circuits coupled between the first and second differential inputs and outputs for adjusting the input signal upward to a predetermined point (Fig. 5, elements 24a, 24b, 34a, 34b, CONTROL signal; column 6, lines 11 – 14; wherein the frequency shaping and gain control is done by elements 24a, 24b, 34a, 34b, CONTROL signal).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the differential equalizer, as taught by Tsinker, in the system of Goyette because this would allow the advantage of differential signals to be taken advantage of (as is well known in the art) and also allow the spectrum to be shaped, as disclosed by Tsinker.

In the same field of endeavor, however, Taralp discloses impedance matching circuits coupled between the first and second differential inputs and outputs for matching impedances of the device to a transmission medium (Abstract; column 1, line 59 – column 2, line 2, especially last 3 lines; Fig. 4, elements 22, 27; column 3, lines 27 – 45).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the impedance matching resistors, as taught by Taralp, in the system of Goyette because this would allow impedance matching to the transmission medium, to maximize power transfer, as is well known in the art.

Claim 15 limitations are similarly analyzed as those in claim 10.

#### ***Other Prior Art Cited***

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

The following patents are cited to further show the state of the art with respect to equalization / amplification:

Pond (US 3,938,056) discloses Method and apparatus for enhancing the output from a traveling wave tube.

Ross (US 5,280,346) discloses an equalizing amplifier.

Daughtry et al. (US 6,160,452) discloses circuits and methods for a monitoring circuit in a network amplifier.

Yuen et al. (US 6,188,279) discloses a low cost miniature broadband linearizer.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adolf DSouza whose telephone number is 571-272-1043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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